

## DIESEL RISK REDUCTION PLAN

### **REDUCING DIESEL PM FROM IN-USE VEHICLES & EQUIPMENT**

**March 2001**

California Environmental Protection Agency



**Air Resources Board**

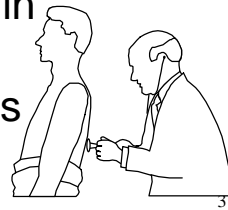
## REDUCING DIESEL PM

- ◆ Why reduce emissions from diesel-fueled engines now?
  - ◆ Diesel PM is a Toxic Air Contaminant
  - ◆ Technology to Reduce Emissions is Available
  - ◆ Costs are Coming Down
  - ◆ 15 ppm S Diesel Fuel Will Be Available Nationwide

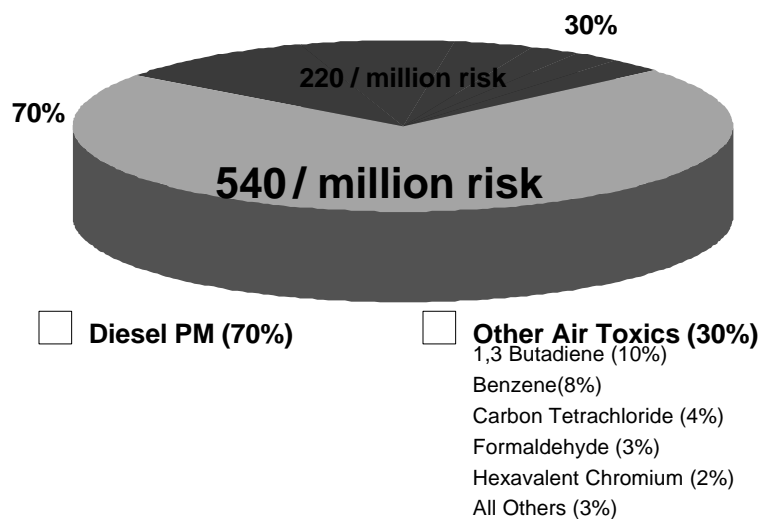
## HEALTH EFFECTS

### PARTICULATE MATTER

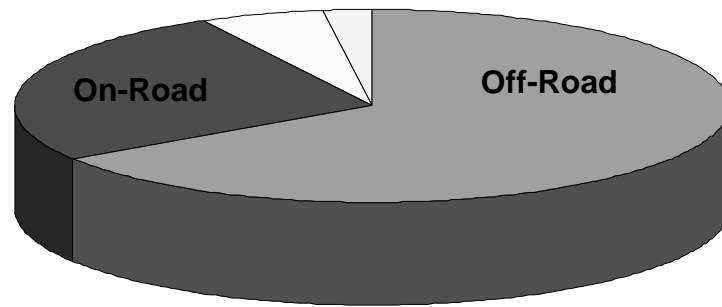
- ◆ Increases lung cancer
- ◆ Increases asthma attacks
- ◆ Aggravates bronchitis
- ◆ Contributes to premature death in people with pre-existing respiratory and cardiac problems



### 70% of Air Toxic Risk is From Diesels



## 98% of Diesel PM is Emitted by Mobile Sources

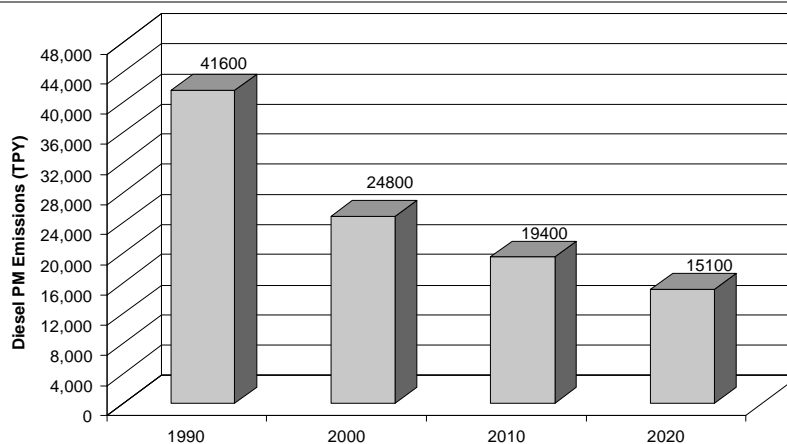


**Year 2000**

■ Off-Road (66%) ■ On-Road (27%)  
□ Portable (5%) □ Stationary (2%)

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## Diesel PM Emissions Trend Under Current Program



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## Diesel Risk Reduction Plan (DRRP)

- ◆ Reduce Emissions from New Engines
- ◆ ***Require Retrofit of Existing Engines***
- ◆ Ensure In-use Emission Performance
- ◆ Provide Low Sulfur Fuel (<15ppm) to Enable Aftertreatment Technology

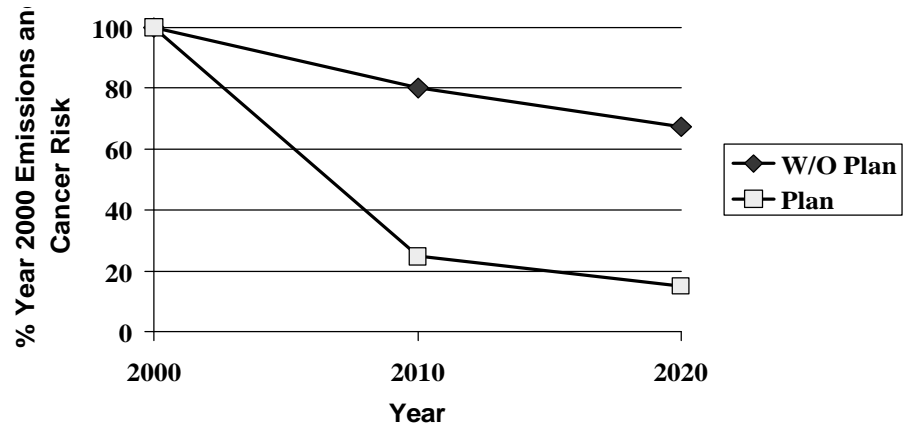
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## In-Use Diesel Retrofit Plan

*“ To protect the health of Californians by retrofitting all in-use diesel engines in California with devices that reduce diesel particulate emissions to near zero, in the shortest possible time.”*

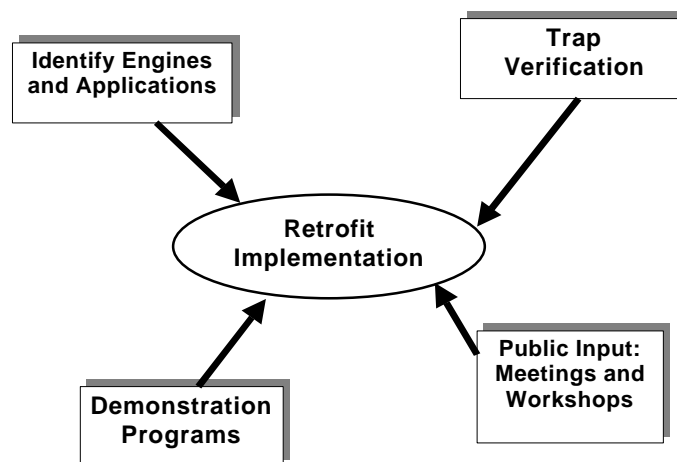
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## Diesel Emissions and Risk Reduced by + 75%



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## Retrofit Implementation



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## Verification of Retrofit Devices Needed to Ensure:

- ◆PM emission reductions  $\geq 85\%$  OR
- ◆PM levels of  $\leq 0.01$  g/bhp-hr
- ◆Emission reduction claims are real and accurate
- ◆Devices are durable

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## Verification: Application Requirements

- ◆Emission Reduction Data
- ◆Durability Data
- ◆Discussion on system Compatibility with Operating Conditions
- ◆General System Requirements
- ◆System Labeling, Warranty, and Owner's Manual

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## Verification: Technical Considerations

- ◆Engine Performance
- ◆Regeneration Requirements
- ◆Application Compatibility
- ◆Other Pollutants
- ◆Fuel Economy

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## Verification: Current Status

- ◆Several Manufacturers Have Applied
- ◆No Particulate Filters Verified Yet
- ◆First Verification Expected This Summer

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## Current Demonstration Programs

- ◆ BP ECD - 7 fleets, 154 vehicles
  - ◆ Ralph's Grocery Trucks -20 vehicles
  - ◆ ARCO Tanker Trucks - 29 vehicles
  - ◆ LA County MTA -20 buses
  - ◆ Hertz Equipment Rental -20 vehicles
  - ◆ LA City Sanitation - 15 trash trucks
  - ◆ People Movers/Local Amusement Park -20 vehicles
  - ◆ San Diego School District - 30 buses
- ◆ SCAQMD School Bus Demo - 40 buses

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## Future Demonstration Programs



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## Diesel Retrofit Projects in California

- ◆ Urban Transit Agencies - ~ 4,500 buses
- ◆ School Districts - ~ 2,000 buses
- ◆ City of Los Angeles - ~ 1,000 vehicles

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## Diesel Retrofit Public Input

- ◆ International Diesel Retrofit Advisory Committee
- ◆ Meetings and Workshops
- ◆ Coordination with Public Agencies
- ◆ Coordination with U.S. EPA

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## Plans for Regulations

- ◆ 2001
  - ◆ Refuse Removal & Recycling
  - ◆ Fuel Delivery Tanker Trucks MOA
- ◆ 2002
  - ◆ Verification of Control Devices
  - ◆ Additional On-Road Public Fleets
- ◆ 2003-2005
  - ◆ Off-Road and On-Road Private Fleets

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## Diesel Retrofit Contacts: Mobile Sources

- ◆ **Annette Hebert, Branch Chief;**  
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  - ◆ **Jim Shears, Demonstrations; jshears; 459-4407**
  - ◆ **Scott Rowland, Verification; srowland; 575-6972**
  - ◆ **Nancy Steele, Implementation; nsteele; 350-6598**
    - ◆ **Crystal Reul, Refuse Truck Rule; creul; 350-6543**

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## More Information On The Web

- ◆ Diesel Risk Reduction Website
- ◆ **[www.arb.ca.gov/diesel/dieselrrp.htm](http://www.arb.ca.gov/diesel/dieselrrp.htm)**
- ◆ Sign Up To Receive Notices
- ◆ Meeting Summaries and Presentations Posted